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Appellant :	Josef Dietl	Art Unit :	2439
Serial No. :	10/675,930	Examiner :	Farid Homayounmehr
Filed :	September 29, 2003	Conf. No. :	2375
Title :	HYBRID DIGITAL SIGNATURE WORKFLOW		

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**BRIEF ON APPEAL OF APPELLANTS UNDER 37 CFR § 41.37**

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### **BRIEF ON APPEAL**

Appellants file this Brief on Appeal under 37 CFR § 41.37, thereby perfecting the Notice of Appeal originally filed on November 23, 2009 after the Advisory Action mailed October 22, 2009 (“Advisory Action”) and the final Office Action mailed August 24, 2009 (“Office Action”), finally rejecting Claims 3–6, 13–16, and 18–28.

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## **I. REAL PARTY IN INTEREST**

The real party in interest is SAP Aktiengesellschaft, the assignee of all right, title, and interest in the above-referenced application by way of Assignment recorded on March 2, 2004, at reel/frame 014391/0270.

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## **II. RELATED APPEALS AND INTERFERENCES**

There are no related appeals or interferences.

### **III. STATUS OF CLAIMS**

Claims 3–6, 13–16, and 18–28 are pending.<sup>1</sup>

Claims 3–6, 13–16, 18–24, and 27–28 are under consideration.

Claims 1–2, 7–12, and 17 have been cancelled.

Claims 3–6, 13–16, 18–28 stand rejected.

Claims 18, 23, and 27 are in independent form.

The final rejection of Claims 3–6, 13–16, 18–24, and 27–28 is being appealed. Claims 18, 23, and 27 are involved directly in the appeal. Claims 3–6, 13–16, 19–22, 24, and 28 are not directly involved in the appeal but rather are involved only by virtue of their dependency from one of Claims 18, 23, or 27. This indirect involvement by the dependent claims should not be interpreted as an admission or position that the dependents represent obvious modifications to the respective independent claim. Instead, Appellants believe that the dependents are allowable at least because the respective independent is allowable.

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<sup>1</sup> Claims 25 and 26 are cancelled with the concurrently filed Amendment.

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#### **IV. STATUS OF AMENDMENTS**

All previously presented amendments have been entered. Appellant submits an Amendment concurrently with this Appeal Brief canceling Claims 25 and 26.

## V. SUMMARY OF CLAIMED SUBJECT MATTER

Independent Claim 18 is drawn to a computer implemented method for processing documents in a workflow system for efficient validation and modification of document content by users external to the system. *See, e.g.*, Application at Abstract, ¶¶ [0004], [0006], [0007], [0011], [0033], [0036], [0037].<sup>2</sup> Specifically, Claim 18 recites:

A computer implemented method in a workflow system and as part of a workflow within the workflow system, comprising:

- generating an electronic document in a workflow system for use with an external entity that does not exchange electronic documents with the workflow system, the electronic document having text content, the electronic document further having a human-readable document appearance representing the text content;

- attaching one or more approval codes to the electronic document, such that when the document is printed, each approval code generates an approval mark;

- converting the text content into a canonical form, wherein the text content is in an unambiguous reading order;

- generating control codes for the electronic document as part of a workflow in the workflow system, the control codes including one or more first control codes that each correspond to a respective approval code, wherein the one or more first control codes authenticate the approval mark associated with the respective approval code, and one or more second control codes generated from the canonical form of the text content, wherein the one or more second control codes authenticate the text content; and

- creating a print out of the electronic document, the print out including a full-sized version of the human-readable document appearance representing the text content, the respective approval mark corresponding to each approval code, the one or more first control codes being usable to authenticate the one or more respective approval marks, and the one or more second control codes being usable to validate the text content of the print out;

- sending the print out to the external entity;

- receiving a modified print out at the workflow system back from the external entity, the modified print out comprising the print out sent to the external entity with a modification;

- validating the modified print out within the workflow system using the one or more control codes;

- integrating the validated and modified print out into the workflow; and

- continuing the workflow for the validated print out within the workflow system.

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<sup>2</sup> Citations to the present Application are to the published application, U.S. Patent Application Publication No. 2004/0128612 (hereinafter "Application").



As such, the computer implemented method for processing documents in a workflow system and as part of a workflow within the workflow system. *See, e.g.*, Application at Abstract, ¶¶ [0004], [0006], [0007], [0011], [0033], [0036]–[0037]. The method includes generating an electronic document in a workflow system for use with an external entity that does not exchange electronic documents with the workflow system, the electronic document having text content and a human-readable document appearance representing the text content. *See, e.g.*, Application, ¶¶ [0007], [0011], [0024]–[0028], [0031], [0034]. The method also includes attaching one or more approval codes to the electronic document, such that when the document is printed, each approval code generates an approval mark. *See, e.g.*, Application, ¶¶ [0007], [0009], [0024], [0026]–[0028], [0032], [0034]. The text content is converted into a canonical form, wherein the text content is in an unambiguous reading order. *See, e.g.*, Application, ¶¶ [0007]–[0008], [0010], [0024]–[0028], [0031], [0034]. The method further includes generating control codes for the electronic document as part of a workflow in the workflow system. *See, e.g.*, Application at Abstract, ¶¶ [0006]–[0008], [0010], [0026], [0028]–[0029], [0030], [0032]. The control codes include one or more first control codes that each correspond to a respective approval code, where the one or more first control codes authenticate the approval mark associated with the respective approval code. *See, e.g.*, Application at Abstract, ¶¶ [0006]–[0008], [0010], [0026], [0028]–[0029], [0030], [0032]. The control codes also include one or more second control codes generated from the canonical form of the text content, where the one or more second control codes authenticate the text content. *See, e.g.*, Application at Abstract, ¶¶ [0006]–[0008], [0010], [0026], [0028]–[0029], [0030], [0032]. In addition, the method includes creating a print out of the electronic document, the print out including a full-sized version of the human-readable document appearance representing the text content, the respective approval mark corresponding to each approval code, the one or more first control codes being usable to authenticate the one or more respective approval marks, and the one or more second control codes being usable to validate the text content of the print out. *See, e.g.*, Application at Abstract, ¶¶ [0005]–[0008], [0010], [0022]–[0024], [0026]–[0030], [0032]. The print out is sent to the external entity. *See, e.g.*, Application at Abstract, ¶¶ [0005]–[0008], [0010], [0022]–[0024], [0026]–[0030], [0032]. The method then includes receiving a modified print out at the workflow system back from the external entity, the modified print out comprising the print out sent to the external entity with a

modification. *See, e.g.,* Application at Abstract, ¶¶ [0006]–[0008], [0010], [0022]–[0025], [0026]–[0030], [0031]–[0033]. The modified print out is validated within the workflow system using the one or more control codes, and the validated and modified print out is integrated into the workflow. *See, e.g.,* Application at Abstract, ¶¶ [0005]–[0008], [0010], [0022]–[0024], [0026]–[0030], [0032]. The method then includes continuing the workflow for the validated print out within the workflow system. *See, e.g.,* ¶¶ Application, ¶¶ [0025], [0031].

Independent Claim 23 is drawn to a computer program product, for example, tangibly embodied in a machine-readable storage device for processing documents in a workflow system for efficient validation and modification of document content by users external to the system. *See, e.g.,* Application at Abstract, ¶¶ [0004], [0006], [0007], [0011], [0033], [0036], [0037]. Specifically, Claim 23 recites:

A computer program product, tangibly embodied in a machine readable storage device, comprising instructions operable to cause a programmable processor to:

receive a print out of an electronic document having text content generated in a workflow system, the print out being received in an external entity that does not exchange electronic documents with the workflow system, the print out having a human-readable document appearance representing the text content, control codes and one or more approval codes, the control codes including one or more first control codes each generated for a respective approval code and one or more second control codes generated from a canonical form of the text content, the print out further representing a full-size version of the human-readable document appearance;

generate approval marks using the respective approval codes, the one or more first control codes generated for each approval code being usable to authenticate the approval marks generated by the approval code;

convert the text content of the human-readable appearance of the print out to the canonical form of the text content; and

access a portal of the workflow system to authenticate the approval marks and to validate the print out using the canonical form and the first and second control codes.

As such, the computer program, tangibly embodied in a machine-readable storage device, includes instructions operable to cause a programmable processor to perform operations. *See, e.g.,* Application at Abstract, ¶¶ [0004], [0006], [0007], [0011], [0033], [0036]–[0037]. The computer program performs operations including receiving a print out of an electronic document having text content generated in a workflow system, the print out being received in an external entity that does not exchange electronic documents with the workflow system. *See, e.g.,* Application at Abstract, ¶¶ [0004]–[0006], [0008], [0010]–[0011], [0022]–[0024], [0026],

[0029]–[0030]. The print out has a human-readable document appearance representing the text content, control codes and one or more approval codes. *See, e.g.*, Application at Abstract, ¶¶ [0006], [0008], [0010], [0026]. The control codes include one or more first control codes, each generated for a respective approval code, and one or more second control codes generated from a canonical form of the text content. *See, e.g.*, Application at Abstract, ¶¶ [0004], [0006], [0007], [0011], [0033], [0036]–[0037]. The print out further represents a full-size version of the human-readable document appearance. *See, e.g.*, Application at Abstract, ¶¶ [0004], [0006], [0007], [0011], [0022], [0031]–[0033]. The computer program product is further operable to generate approval marks using the respective approval codes. *See, e.g.*, Application, ¶¶ [0007], [0009], [0024], [0026]–[0028], [0032], [0034]. The one or more first control codes generated for each approval code are usable to authenticate the approval marks generated by the approval code. *See, e.g.*, Application, ¶¶ [0007], [0009], [0024], [0026]–[0028], [0032], [0034]. The text content of the human-readable appearance of the print out can be converted to the canonical form of the text content, *see, e.g.*, Application, ¶¶ [0007], [0009], [0024], [0026]–[0028], [0032], [0034], and a portal of the workflow system can be accessed to authenticate the approval marks and to validate the print out using the canonical form and the first and second control codes. *See, e.g.*, Application, ¶¶ [0007], [0009], [0022]–[0023], [0026]–[0028], [0030], [0033].

Independent Claim 27 is drawn to a computer program product, for example, tangibly embodied in a machine-readable storage device for processing documents in a workflow system for efficient validation and modification of document content by users external to the system. *See, e.g.*, Application at Abstract, ¶¶ [0006], [0036]. Specifically, Claim 23 recites:

A computer program product, tangibly embodied in a machine-readable storage device, comprising instructions operable to cause a programmable processor to:

generate an electronic document in a workflow system as part of a workflow, the electronic document being for use with an external entity that does not exchange documents with the workflow system, the electronic document having text content, the electronic document further having a human-readable document appearance representing the text content;

attach one or more approval codes to the electronic document, such that when the document is printed, each approval code generates an approval mark;

convert the text content into a canonical form, wherein the text content is in an unambiguous reading order;

generate control codes for the electronic document as part of a workflow in the workflow system, the control codes including one or more first control codes each

corresponding to a respective approval code, wherein the one or more first control codes authenticate the respective approve code, and one or more second control codes generated from the canonical form of the text content, wherein the one or more second control codes authenticate the text content;

create a print out of the electronic document to be sent to the external entity as part of the workflow, the print out including a full-sized version of the human-readable document appearance representing the text content, the respective approval mark corresponding to each approval code, the one or more first control codes being usable to authenticate the one or more respective approval marks, and the one or more second control codes being usable to validate the canonical form of the text content of the print out;

send the print out to an external entity;

receive the print out at the workflow system from the external entity, the print out comprising a human signature added subsequent to sending the print out to the external entity;

validate the print out comprising the human signature within the workflow system using the one or more control codes;

integrate the validated print out comprising the human signature into the workflow; and

continue the workflow for the validated print out within the workflow system.

As such, the computer program product, for example tangibly embodied on a computer-readable storage device, includes instructions operable to cause a programmable processor to perform processes. *See, e.g.*, Application at Abstract, ¶¶ [0004], [0006], [0007], [0011], [0033], [0036]–[0037]. The computer program product instructions are operable to generate an electronic document in a workflow system as part of a workflow, the electronic document being for use with an external entity that does not exchange documents with the workflow system. *See, e.g.*, Application, ¶¶ [0007], [0011], [0024]–[0028], [0031]–[0032], [0034]. The electronic document has a text content and a human-readable document appearance representing the text content. *See, e.g.*, Application, ¶¶ [0007]–[0008], [0010], [0024]–[0028], [0031], [0034]. The computer program product is operable to attach one or more approval codes to the electronic document, such that when the document is printed, each approval code generates an approval mark. *See, e.g.*, Application, ¶¶ [0007], [0009], [0024], [0026]–[0028], [0032], [0034]. The text content can be converted into a canonical form, wherein the text content is in an unambiguous reading order. *See, e.g.*, Application, ¶¶ [0007]–[0008], [0010], [0024]–[0028], [0031], [0034]. The computer program product instructions are further operable to generate control codes for the electronic document as part of a workflow in the workflow system, the control codes including

one or more first control codes each corresponding to a respective approval code, wherein the one or more first control codes authenticate the respective approve code, and one or more second control codes generated from the canonical form of the text content, wherein the one or more second control codes authenticate the text content. *See, e.g.*, Application at Abstract, ¶¶ [0006]–[0008], [0010], [0026], [0028]–[0029], [0030], [0032]. The computer program product is further operable to create a print out of the electronic document to be sent to the external entity as part of the workflow, the print out including a full-sized version of the human-readable document appearance representing the text content, the respective approval mark corresponding to each approval code, the one or more first control codes being usable to authenticate the one or more respective approval marks, and the one or more second control codes being usable to validate the canonical form of the text content of the print out. *See, e.g.*, Application at Abstract, ¶¶ [0005]–[0008], [0010], [0022]–[0024], [0026]–[0030], [0032]. The print out is sent to an external entity. *See, e.g.*, Application at Abstract, ¶¶ [0005]–[0008], [0010], [0022]–[0024], [0026]–[0030], [0032]. The computer program product is then operable to receive the print out at the workflow system from the external entity, the print out comprising a human signature added subsequent to sending the print out to the external entity. *See, e.g.*, Application at Abstract, ¶¶ [0006]–[0008], [0010], [0022]–[0025], [0026]–[0030], [0031]–[0033]. The print out comprising the human signature is validated by the computer program product within the workflow system using the one or more control codes, and the validated print out comprising the human signature is integrated into the workflow. *See, e.g.*, Application at Abstract, ¶¶ [0005]–[0008], [0010], [0022]–[0024], [0026]–[0030], [0032]. The computer program product is then operable to continue the workflow for the validated print out within the workflow system. *See, e.g.*, ¶¶ Application, ¶¶ [0025], [0031].

Accordingly, the present disclosure relates to processing documents within a workflow, which in some embodiments provides methods and apparatuses, including computer program products, implementing techniques for providing documents with text content and control codes for validating text content. *See, e.g.*, Application at Abstract, ¶¶ [0004], [0006], [0007], [0011], [0033], [0036], [0037]. Workflow systems that route documents entirely in electronic form for validation or other verification steps by individuals within the workflow can be efficient because the document is automatically routed through the workflow system to each step required by the

process. *See, e.g.*, Application ¶ [0004]–[0005]. Such systems are less efficient when the workflow system has to interact with external entities, such as entities that cannot communicate directly or electronically with the workflow system. *See, e.g.*, Application ¶ [0004]. In such a scenario, it may be necessary to send a print out of the document to the external entity because the external entity cannot receive documents directly from the workflow system. *See, e.g.*, Application ¶ [0004]–[0005]. In that case, the individuals within the workflow who are required to validate or approve the document would have to physically sign the document. *See, e.g.*, Application ¶ [0004]–[0005].

The foregoing methods, programs, and devices of claims 18, 23, and 27 can, in certain situations, overcome these problems by providing print outs with approval marks and one or more control codes that can be used to authenticate the print out by validating its content. *See, e.g.*, Application at Abstract, ¶¶ [0006]–[0008]. An electronic document is generated within the workflow and has a human-readable document appearance representing text content. *See, e.g.*, Application at Abstract, ¶¶ [0006]–[0008]. One or more approval codes are attached to the electronic document, such that when the document is printed, each approval code generates an approval mark on the print out. *See, e.g.*, Application at Abstract, ¶¶ [0006]–[0008]. The text content of the document is converted into a canonical form in an unambiguous reading order. Control codes are generated for the electronic document as part of the workflow. *See, e.g.*, Application at Abstract, ¶¶ [0006]–[0008]. The control codes include one or more first control codes that can authenticate the approval mark associated with a respective approval code. *See, e.g.*, Application at Abstract, ¶¶ [0006]–[0008]. The control codes also include one or more second control codes generated from the canonical form of the text for authenticating the text content. *See, e.g.*, Application at Abstract, ¶¶ [0006]–[0008]. Control codes can be generated for the entire document, or, in certain embodiments, a control code can be generated for each page of the print out. *See, e.g.*, Application at Abstract, ¶¶ [0006]–[0008]. A print out of the electronic document would be in a human readable document appearance representing text content, and have approval marks, first control codes, and second control codes. *See, e.g.*, Application at Abstract, ¶¶ [0006]–[0008].

As mentioned above, when the document is sent to the external entity, it has one or more approval marks, one or more first control codes, and one or more second control codes, each of

which were automatically generated in the workflow and part of the printed document. *See, e.g.*, Application at Abstract, ¶¶ [0006]–[0008], [0010], [0026], [0028]–[0029]. This removes the need for human generated signatures of individuals within the workflow to verify the text content or other authentication prior to sending the document to the external entity. *See, e.g.*, Application, ¶¶ [0004]–[0005]. Instead, the approval marks and the control codes can be used to authenticate the document. *See, e.g.*, Application at Abstract, ¶¶ [0006]–[0010]. Communicating documents with external entities, thus, can be performed efficiently and without having to add steps to or break the workflow to add human signatures to the printed document. *See, e.g.*, Application ¶¶ [0004]–[0005], [0011].

The use of first and second control codes also permits the document to be modified (by hand, such as a signature) by the external entity and reintegrated into the workflow after verification of the authenticity of the text content of the document. *See, e.g.*, Application ¶ [0033]. The first control codes authenticate the approval marks, which are associated with approval codes on the electronic document. *See, e.g.*, Application at Abstract, ¶¶ [0026], [0030], [0031]–[0033]. The second control codes authenticate the text content. Having both first and second control codes permits authentication and verification of the document received from the external entity. *See, e.g.*, Application at Abstract, ¶¶ [0026], [0030]–[0033]. This authentication and validation prevent the external entity from modifying the text content of the document (besides signing it or adding some other hand written modification) and permits reintegration of the document into the workflow using electronic verification and authentication methods using one of the control codes. *See, e.g.*, Application ¶¶ [0026], [0030]–[0033].

As described in the patent, other features, aspects, and advantages are apparent from the description, the drawings, and the claims. *See, e.g.*, Application ¶ [0041].

## **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

(A) Claims 3–6, 13–16, and 18–28 stand rejected as unpatentable under 35 U.S.C. § 103(a) over U.S. Patent Application Publication No. 2002/0069179 to Slater et al. (“*Slater*”) in view of U.S. Patent No. 6,634,559 to Shioda et al. (“*Shioda*”) further in view of U.S. Patent Application Publication No. 2004/0193543 to Nord et al. (“*Nord*”). Appellant is submitting an Amendment concurrently with this Appeal Brief canceling Claims 25 and 26. Accordingly, Appellant appeals the rejection of Claims 3–6, 13–16, 18–24, and 27–28.

(B) Claims 23–28 stand rejected as unpatentable under 35 U.S.C. § 101. Appellant is submitting an Amendment concurrently with this Appeal Brief canceling Claims 25 and 26. Accordingly, Appellant appeals the rejection of Claims 23–24 and 27–28.



## VII. ARGUMENT

### A. Claims 3–6, 13–16, 18–24, and 27–28 are allowable over *Slater* in view of *Shioda* further in view of *Nord*.

Claims 3–6, 13–16, 18–24, and 27–28 stand rejected as unpatentable under 35 U.S.C. § 103(a) over *Slater* in view of *Shioda* further in view of *Nord*. This rejection is being appealed. Appellants respectfully assert that the present claims are allowable because *Slater*, either individually or in combination with *Shioda* and/or *Nord*, fails to teach, suggest, or otherwise disclose various aspects of the present claims as required by the M.P.E.P. and the patent laws of the United States. *See* M.P.E.P. § 2141 *et seq.*

Put simply, the *Slater-Shioda-Nord* combination fails to teach implementing a workflow system that generates printed out documents sent to and for use with external entities that do not exchange electronic documents with the workflow, but that then receives a modified version of the printed out document back from the external entity for reintegration into the workflow after validating the modified and printed out document. For instance, *Slater* is directed to a system for generating, by electronic means, a legally enforceable document. *Slater* fails to teach receiving modified print outs from external entities outside the workflow and reintegrating the received print outs back into the workflow. The legal documents of *Slater* do not leave the workflow, and more to the point, the printed out version of the legal document is not modified by an external entity or reintegrated into the workflow with the modification. Similarly, *Shioda* also does not teach receiving a modified print out, validating the modified print out using existing validation information on the print out, and reintegrating the modified print out back into a workflow. *Nord* is directed to generating a digital copy of a legally valid document by simultaneously signing the printed and electronic copies of the document. *Nord* can be read to teach two alternative embodiments: First, a signor would sign the electronic document and the paper document within the workflow, in which case the document never leaves the workflow. Second, the electronic document is sent to the signor, in which case the signor does exchange electronic documents with the workflow. In either case, *Nord* fails to teach elements of the claims deficient from the *Slater-Shioda* combination. In addition, all references fail to teach, whether alone or in

combination, generating control codes including “one or more second control codes generated from the canonical form of the text content [that] authenticate the text content.”

*1. The Cited Art Fails to Teach Control Codes Generated from the Canonical Form of the Text Content*

Turning to several of the specific elements of example Claim 18 that are missing from the cited references, the *Slater-Shioda-Nord* combination fails to teach, *inter alia*, “generating control codes for the electronic document as part of a workflow in the workflow system, the control codes including . . . one or more second control codes generated from the canonical form of the text content, wherein the one or more second control codes authenticate the text content.” At best, *Slater* teaches adding digital signatures to an electronic document by a primary signor, a notary, or recorder to create a legally enforceable electronic document, while *Shioda* merely teaches barcodes that represent planned processes encoded by the creator of the datasheet. Likewise, *Nord* merely teaches that a digital document is provided with a unique identity in the form of a barcode, an alphanumeric sequence, or another unique mark placed somewhere on the document before it is printed. Because the art, either alone or in combination, fails to teach at least this element of the claims, Appellant respectfully requests reconsideration and allowance of the claims.

The Office Action argues that *Slater* teaches generating one or more second control codes generated from the canonical form of the text content by teaching “signing the entire document, for example by a notary or recorder after primary signers sign the document. The signature by notary or recorder applies to the content of the document, which . . . includes a canonical converted text.” Office Action, Aug. 24, 2009, at 6. In other words, the Office Action argues that the following teaches the element at issue: since the digital signature of *Slater* is applied to the whole document, and the digital signature can be verified, the text content of the document can thus be verified by verifying the digital signature. This argument, however, fails to show that *Slater* teaches generating control codes from the canonical form of the text content that authenticate the text content. Rather, this argument merely advances the notion that the digital signature of the notary or recorder is applied to the document or text. The digital signatures of the notary and recorder are added to the electronic document after it is signed by the primary

signer. See *Slater* ¶¶ [0044]–[0048]. For example, *Slater* teaches that “[a]fter the content has been entered, the document is digitally signed (252) by one or more persons who are indicated in or on the electronic document.” *Slater* ¶ [0044]. “After all of the digital signatures have been obtained and inserted, the electronic document is digitally notarized (253).” *Slater* ¶ [0045]. Nowhere in *Slater* does it teach generating a control code from the canonical form of the text content. Moreover, *Slater* teaches that verification of the digital signature requires reconstruction of the digital document from a previous state, which illustrates that *Slater* teaches away from using control codes to authenticate the text content, let alone “one or more second control codes generated from the canonical form of the text content [that] authenticate the text content” as recited in example Claim 18.

*Shioda* fails to overcome the deficiencies of *Slater* with regard to this element. The Office Action argues that *Shioda* teaches barcodes representing control codes. See Office Action, Aug. 24, 2009, at 6. The barcodes of *Shioda*, however, are not analogous to at least the second control codes of the present application. The barcodes taught by *Shioda* are “used by a reading device to perform processes planned by a creator of the printed matter.” *Shioda*, 6:57–59. In its discussion of barcodes, *Shioda* fails to teach or suggest that the barcodes represent control codes generated from the canonical form of the text. Therefore, neither *Slater* nor *Shioda*, taken individually or in combination, teaches generating control codes for the electronic document, the control codes including one or more second control codes generated from the canonical form of the text content as recited in Claim 18.

*Nord* fails to overcome the deficiencies of *Slater* and *Shioda*. Nowhere does *Nord* teach generating control codes, let alone control codes generated from the canonical form of the text content that authenticate the text content. At best, *Nord* teaches providing a filled-in digital document “with a unique identity e.g. in the form of a barcode, an alphanumerical sequence or another unique mark placed somewhere on the document before it . . . is printed as a paper original 50 of the filled out digital document 30.” *Nord* ¶ [0066]. Therefore, *Slater*, *Shioda*, and *Nord*, whether alone or in some combination, fail to teach or suggest at least this element of Claim 18.

2. *The Cited Art Fails to Teach Receiving the Modified Print Out from the External Entity and Validating the Modified Print Out Using the Control Codes*

The *Slater-Shioda-Nord* combination also fails to teach that upon receiving the modified print out from the external entity, the modified print out is validated using the one or more control codes appearing thereon.<sup>3</sup> First, *Shioda* does not teach content validation using control codes. *Shioda* merely teaches that the “codes [are] used by a reading device for confirming a password for the printed matter, permitting the printed matter only to be printed, enabling only creation of a file or only fax of the file, or letting a holder of the printed matter select a process among several processes by displaying a menu.” *Shioda*, 6:59–64. Second, *Shioda* fails to teach integrating the modified print out back into the workflow. For example, the data sheet taught by *Shioda* is a rewritable data sheet. *Shioda* teaches that during the printing process, “the control device erases information recorded on the medium by heating the medium to a fixed temperature. . . . Taking the step, the control device prints information on the medium, to which the step has been performed, by heating the medium to a fixed temperature.” *Shioda* 27:3–13 (internal references omitted). As such, in printing the data sheet of *Shioda*, the original contents of the data sheet are erased.<sup>4</sup>

*Slater* fails to overcome the various deficiencies of *Shioda*. For example, *Slater* fails to teach that the one or more first and second control codes appear on a printed document. Specifically, *Slater* teaches printing an electronic document only at one point in its disclosure:

In addition, each signer often desires a copy of what they digitally signed. This can be accomplished by emailing the document to the signer after it has been signed, by printing a signed version of the document, saving a copy of the document's current stage to a disk, and the like. This enables each signer to

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<sup>3</sup> As admitted by the Office Action, the *Slater-Shioda* combination does not teach “sending the print out to the external entity,” “receiving a modified print out at the workflow system back from the external entity, the modified print out comprising the print out sent to the external entity with a modification,” “validating the modified print out within the workflow system using the one or more control codes,” and “integrating the modified print out into the workflow,” as recited by example Claim 18. This is discussed further below.

<sup>4</sup> Furthermore, *Shioda* teaches away from printing out documents. For example, *Shioda* teaches that “with recent advancement of computers and network technologies, consumption of paper by printers and the like has increased. With such increased consumption of paper, destruction of forests, a garbage disposal problem, a temperature rise caused by an increase in an amount of carbon dioxide in the air, and the like, so called environmental problems have been occurring. Accordingly, it is requested to reduce the consumption of paper.” *Shioda*, 1:53–60.

compare the document that is ultimately recorded with the document as it existed when they signed it.

*Slater* ¶ [0064]. In other words, *Slater* merely teaches that a signor *of the electronic document* can print a copy of it *before the electronic document is signed* by the notary or the recorder. Thus, the printed electronic document would contain either the one or more first control codes *or* the one or more second control codes, but not both because the electronic document from which the print out is based has yet to be routed through the entire workflow. Furthermore, *Slater* does not teach that the printed document could be received at the workflow following a modification to the printed document itself by the external entity, wherein the modified printed document is then validated and integrated back into the workflow, as admitted by the Office Action. In fact, *Slater* teaches away from this notion because *Slater* is directed to generating a legally enforceable document by entirely electronic means. *See Slater* ¶ [0006] (“[T]he characteristics (such as authenticity and security) are arguably better than their paper counterparts.”); *see also id.* at Abstract, ¶¶ [0007], [0011].

Additionally, *Slater* does not teach that the print out is validated upon receipt from the external entity using one or more control codes affixed to the print out. To the contrary, *Slater* teaches that the electronic document can be printed out by a signor before the electronic document is signed by the notary or recorded and before the electronic document is routed through the entire workflow. *See Slater* ¶ [0064]. Moreover, the print out discussed in *Slater* does not contain one or more first or second control codes from which the print out can be validated.

The Office Action argues that Figures 4–6 and the accompanying text in *Slater* teach verifying a document using one or more control codes. To the contrary, Appellant respectfully submits that *Slater* teaches away from using control codes for verifying the text content. This is best illustrated by the cited passages of *Slater*, which teach that “the notary signature and/or other signature are validated as previously described, which often involves reconstructing the document to a previous state as previously described.” *Slater* ¶ [0091]; *see also id.* Fig. 6 and accompanying text. *Slater* further teaches that “[r]econstructing an electronic document ensures that the electronic document has not been changed or altered and is also used when a digital signature is validated.” *Slater* ¶ [0063]. Accordingly, *Slater* teaches away from using one or

more control codes because *Slater* requires reconstruction of the entire document to a previous state to perform validation.

Further, *Nord* does not teach at least these aspects of Claim 18. As described above, *Nord* does not teach generating one or more second control codes generated from the canonical form of the text content that authenticate the text content. It follows, then, that *Nord* also does not teach validating the modified print out within the workflow system using the one or more control codes. Even a cursory inspection of *Nord* reveals that at least this element is absent from the reference. This is because *Nord* is directed to the “simultaneous signing of the corresponding filled-in paper and digital original documents.” *Nord* ¶ [0067]. Since the original electronic and paper copies are signed at the same time, there would be no reason for *Nord* to use a control code to validate, for example, the text content after it has been modified. In other words, the simultaneous signing of the digital and electronic copies obviates the need to validate the signed document since the printed document is necessarily identical to the digital document.

At best, *Nord* teaches,

[a]n optical guide (not shown in the FIGURE), e.g., incorporated in the digitizing means 60, can be provided for reading and, through the computerized device 10, enabling comparing, matching, the unique identification codes provided on the paper original 50 and on the respective underlying digital counterpart 30, ensuring that the two originals 30, 50 to be simultaneously signed have the same unique code and that they thus constitute the same document.

*Nord* ¶ [0067]. This passage, however, fails to teach at least “one or more second control codes generated from the canonical form of the text content [that] authenticate the text content.” Instead, this passage from *Nord* teaches that the identification appearing on the digital document is optically compared with the identification appearing on the paper document. If the two identifications match, the two documents are assumed to constitute the same document.

### 3. *Nord Fails to Remedy the Admitted Deficiencies of the Slater-Shioda Combination*

As admitted by the Office Action, the following elements are “not explicitly taught by the combination of *Slater* and *Shioda*”:

- “receiving a modified print out at the workflow system back from the external entity, the modified print out comprising the print out sent to the external entity with a

modification;”

- “validating the modified print out within the workflow system using the one or more control codes;”
- “integrating the validated and modified print out into the workflow; and”
- “continuing the workflow for the validated print out within the workflow system.”

Office Action, Aug. 24, 2009, at 8. *Nord* is thus apparently relied on by the Office Action for teaching these elements. For at least the reasons discussed below, Appellant respectfully submits that *Nord* fails to remedy the admitted deficiencies of the *Slater-Shioda* combination.

Put simply, *Nord* is directed to generating a digital copy of a legally valid document by simultaneously signing the printed and electronic copies of the document. *See, e.g., Nord*, Abstract. Specifically, *Nord* teaches “a method for a simultaneous, legally binding, signing of a paper- and a digital document being provided with a single unique identity, wherein only one signing provides a legally valid paper original of [.,e.g.,] an agreement, contract or the like having a digital equivalence.” *Nord* ¶ [0010]. For example, *Nord* teaches that the “simultaneous signing of the corresponding filled-in paper- and digital original documents can . . . be accomplished through placing the paper original 50 on top and fitting the outlining of the corresponding underlying digital original 30 being displayed on a digitizing means 60, connected to the computer device 10.” *Nord* ¶ [0067]. *Nord* then uses a unique identity appearing on both the digital and paper documents to verify that the unsigned documents are the same. *See Nord* ¶ [0067] (teaching that the “two originals 30, 50 to be simultaneously signed have the same unique code and that they thus constitute the same document” (emphasis added)). Further, “[a]n optical guide . . . can be provided for reading and, through the computerized device 10, enabling comparing, matching, the unique identification codes provided on the paper original 50 and on the respective underlying digital counterpart 30.”<sup>3</sup> *Nord* ¶ [0067]. “The digitally signed original can then e.g. be sent with telecom. speed” to other parties. *Nord* ¶ [0069].

*(a) Nord Fails to Teach the “Validating” Element of the Present Claims*

As can be seen from the description above, *Nord* does not teach “validating the modified print out within the workflow system using the one or more control codes,” as recited in the claims. First, *Nord* explicitly states that the only step resembling validation of the document

occurs prior to the simultaneous signing of the document. *See Nord* ¶ [0067]. In other words, *Nord* does not teach validating the document using control codes after it has been signed.

Instead, *Nord* teaches that the identification appearing on the digital document is optically compared with the identification appearing on the paper document. *See Nord* ¶ [0067]. If the two identifications match, the paper and electronic documents are assumed to be the same document, and the signor is free to simultaneously sign the paper and digital originals by overlaying the paper document on the described digitizing means. Second, the present claims recite validating a document that has been modified by comparing control codes appearing on the modified document with control codes appearing on the unmodified, or original, document. In other words, the present claims recite comparing and validating two separate versions of a document: one modified and one unmodified, whereas *Nord* teaches comparing a digital and paper copy of the same (that is, unmodified) document. Third, since the original electronic and paper copies are signed at the same time, there would be no reason for *Nord* to use one or more control codes to validate the document after it has been modified. In other words, the simultaneous signing of the digital and electronic copies obviates the need to validate the signed document since the printed document is already determined to be identical to the digital document. This is further evidenced by the teaching of *Nord* that the unsigned documents are verified prior to the simultaneous signing. Therefore, *Nord* fails to teach at least this element of Claim 18, and thus fails to overcome the admitted deficiencies of the *Slater-Shioda* combination.

*(b) Nord Fails to Teach the “Integrating” Element of the Present Claims*

Further, *Nord* fails to teach “integrating the validated and modified print out into the workflow,” as recited in example Claim 18. To the contrary, *Nord* teaches that simultaneously signing a paper and electronic copy of the document allows the electronic copy to be maintained in the workflow without having to scan, copy, or otherwise integrate the modified paper document back into the workflow. Moreover, *Nord* explicitly teaches away from scanning documents following a modification. For example, *Nord* states that the “processes of subsequent copying and scanning of signed contracts, agreements, deeds and the like documents” is “impractical, time-consuming, tedious and unnecessarily costly due to the manual effort incorporated” and “demands extra equipment to be at hand in the form of e.g. bulky scanning



and copying machines, a fact which ads [sic] to the inflexibility of the process as a whole.” *Nord* ¶ [0006]. Therefore, *Nord* not only fails to teach this element of Claim 18, but actually teaches away from integrating the validated and modified print out back into the workflow as recited in example Claim 18. Thus, *Nord* again fails to overcome the admitted deficiencies of the *Slater-Shioda* combination.

For at least the forgoing reasons, Appellant submits that the *Slater-Shioda-Nord* combination fails to teach, suggest, or disclose each and every element recited in example Claim 18. Accordingly, Appellant respectfully requests withdrawal of the § 103 rejections, as well as reconsideration and allowance of Claim 18 and its dependents. Further, independent Claims 23, and 27 recite certain elements analogous to those of Claim 18. For at least reasons similar to those discussed with regard to Claim 18, independent Claims 23, and 27, as well as their dependents, are also allowable over the *Slater-Shioda-Nord* combination. Thus, Appellant respectfully requests that the rejections of those claims also be withdrawn and the claims be allowed.

**B. The Claims Fall Within a Statutory Class of Patentable Subject Matter**

Claims 23–24 and 27–28 are under consideration, rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Appellant respectfully traverses this rejection, as each of the pending claims falls within one of the statutory classes of patentable subject matter. Appellant further traverses the rejection because the claims satisfy at least one of the two tests articulated in the M.P.E.P.:

A claimed invention is directed to a practical application of a 35 U.S.C. 101 judicial exception when it:

- (A) “transforms” an article or physical object to a different state or thing; or
- (B) otherwise produces a useful, concrete and tangible result . . . .

M.P.E.P. § 2106(IV)(C)(2). For example, Claim 23 recites a computer program product, tangibly embodied in a machine-readable storage device, comprising instructions operable to cause a programmable processor to, *inter alia*, “convert the text content of the human-readable appearance of the print out to the canonical form of the text content,” transforming the text

content of the print out to the canonical form of the text content. Claim 27 recites a computer program product, tangibly embodied in a machine-readable storage device, comprising instructions operable to cause a programmable processor to, *inter alia*, “create a print out of the electronic document to be sent to the external entity.” These claims recite printing or creating a print out, which transforms the electronic document into a paper document and produces a useful, concrete and tangible result. The claims clearly recite elements that place the claims within one of the statutory classes of patentable subject matter pursuant to 35 U.S.C. § 101. As such, Appellant respectfully traverses the rejection and requests reconsideration and allowance of the claims.

## VIII. CONCLUSION

For the reasons advanced above, Appellant respectfully submits that the present claims are allowable over the cited prior art references. Reversal of the rejections under 35 U.S.C. §§ 101 and 103 is respectfully requested. If questions remain regarding the above, please contact the undersigned.

Concurrently with the filing of this Appeal Brief, Appellant submits an Amendment canceling Claims 25 and 26.

The Appeal Brief fee in the amount of \$540 is being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization to Deposit Account No. 06-1050. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: March 22, 2010

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## **APPENDIX OF CLAIMS**

3. The method of claim 18, wherein generating the approval mark comprises:  
generating a digital signature as the approval code; and  
generating a signature image associated with the approval code.
4. The method of claim 18, wherein generating one or more second control codes comprises:  
generating a single second control code for all of the text content.
5. The method of claim 18, wherein the print out has two or more physical pages and generating the one or more second control codes comprises:  
generating one or more second control codes, each second control code corresponding to the text content on a page of the one or more physical pages.
6. The method of claim 18, wherein generating the one or more second control codes comprises:  
encrypting the canonical form with a private key, the private key having an associated public key certificate for retrieving a public key associated with the private key.
13. The computer program product of claim 25, wherein the instructions to generate the approval code cause the data processing equipment to:  
generate a digital signature as the approval code; and  
generate a signature image associated with the approval code.
14. The computer program product of claim 27, wherein the instructions to generate the one or more second control codes cause the data processing equipment to:  
generate a single second control code for all of the text content.

15. The computer program product of claim 27, wherein the print out has two or more physical pages, and the instructions to generate the one or more second control codes cause the data processing equipment to:

generate one or more second control codes, each second control code corresponding to the text content on a page of the one or more physical pages.

16. The computer program product of claim 27, wherein the instructions to generate the one or more control codes cause the data processing equipment to:

encrypt the canonical form with a private key, the private key having an associated public key certificate for retrieving a public key associated with the private key.

17. (Canceled)

18. A computer implemented method, comprising:

in a workflow system and as part of a workflow within the workflow system:

generating an electronic document in a workflow system for use with an external entity that does not exchange electronic documents with the workflow system, the electronic document having text content, the electronic document further having a human-readable document appearance representing the text content;

attaching one or more approval codes to the electronic document, such that when the document is printed, each approval code generates an approval mark;

converting the text content into a canonical form, wherein the text content is in an unambiguous reading order;

generating control codes for the electronic document as part of a workflow in the workflow system, the control codes including one or more first control codes that each correspond to a respective approval code, wherein the one or more first control codes authenticate the approval mark associated with the respective approval code, and one or more second control codes generated from the canonical form of the text content, wherein the one or more second control codes authenticate the text content; and

creating a print out of the electronic document, the print out including a full-sized version of the human-readable document appearance representing the text content, the respective approval mark corresponding to each approval code, the one or more first control codes being usable to authenticate the one or more respective approval marks, and the one or more second control codes being usable to validate the text content of the print out;

sending the print out to the external entity;

receiving a modified print out at the workflow system back from the external entity, the modified print out comprising the print out sent to the external entity with a modification;

validating the modified print out within the workflow system using the one or more control codes;

integrating the validated and modified print out into the workflow; and

continuing the workflow for the validated print out within the workflow system.

19. The computer implemented method of claim 18, wherein the modified print out comprises the print out sent to the external entity and a subsequently added human signature.

20. The computer implemented method of claim 18, wherein generating an electronic document in a workflow system comprises routing the electronic document to one or more workflow locations; and wherein attaching one or more approval codes to the electronic document comprises verifying the content of the electronic document at each of the one or more workflow locations.

21. The computer implemented method of claim 18, wherein the one or more approval codes authenticate the text content of the electronic document and identify one or more approvers associated with the approval codes.

22. (Previously Presented) The computer implemented method of claim 18, wherein the print out comprises a barcode representation of the one or more first control codes and the one or more second control codes.

23. A computer program product, tangibly embodied in a machine-readable storage device, comprising instructions operable to cause a programmable processor to:

receive a print out of an electronic document having text content generated in a workflow system, the print out being received in an external entity that does not exchange electronic documents with the workflow system, the print out having a human-readable document appearance representing the text content, control codes and one or more approval codes, the control codes including one or more first control codes each generated for a respective approval code and one or more second control codes generated from a canonical form of the text content, the print out further representing a full-size version of the human-readable document appearance;

generate approval marks using the respective approval codes, the one or more first control codes generated for each approval code being usable to authenticate the approval marks generated by the approval code;

convert the text content of the human-readable appearance of the print out to the canonical form of the text content; and

access a portal of the workflow system to authenticate the approval marks and to validate the print out using the canonical form and the first and second control codes.

24. The computer program product of claim 23, wherein the print out comprises a barcode representation of the one or more first control codes and the one or more second control codes.



27. A computer program product, tangibly embodied in a machine-readable storage device, comprising instructions operable to cause a programmable processor to:

generate an electronic document in a workflow system as part of a workflow, the electronic document being for use with an external entity that does not exchange documents with the workflow system, the electronic document having text content, the electronic document further having a human-readable document appearance representing the text content;

attach one or more approval codes to the electronic document, such that when the document is printed, each approval code generates an approval mark;

convert the text content into a canonical form, wherein the text content is in an unambiguous reading order;

generate control codes for the electronic document as part of a workflow in the workflow system, the control codes including one or more first control codes each corresponding to a respective approval code, wherein the one or more first control codes authenticate the respective approve code, and one or more second control codes generated from the canonical form of the text content, wherein the one or more second control codes authenticate the text content;

create a print out of the electronic document to be sent to the external entity as part of the workflow, the print out including a full-sized version of the human-readable document appearance representing the text content, the respective approval mark corresponding to each approval code, the one or more first control codes being usable to authenticate the one or more respective approval marks, and the one or more second control codes being usable to validate the canonical form of the text content of the print out;

send the print out to an external entity;

receive the print out at the workflow system from the external entity, the print out comprising a human signature added subsequent to sending the print out to the external entity;

validate the print out comprising the human signature within the workflow system using the one or more control codes;

integrate the validated print out comprising the human signature into the workflow; and

continue the workflow for the validated print out within the workflow system.

28. The computer program product of claim 27, wherein the print out comprises a barcode representation of the one or more first control codes and the one or more second control codes.

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## **EVIDENCE APPENDIX**

None

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**RELATED PROCEEDINGS APPENDIX**

None